

# PSYCHE.

## HILARIMORPHA AND APIOCERA.

BY SAMUEL WENDELL WILLISTON, NEW HAVEN, CONN.

In the examination, recently, of a small collection of Diptera sent me by Mr. Charles Robertson of Carlinville, Illinois, I detected several specimens, which, upon examination, proved conclusively to belong to the genus *Hilarimorpha*, whose systematic position has been the subject of some discussion. The two other known species, both European, were first located by Schiner, the author of the genus, in close proximity to *Hilara* in the family *empididae*. Later, from a renewed study of the subject, he arrived at the conclusion that they "undoubtedly belong to the *leptidae*." Mik, more recently (Ueber die systematische Stellung des Genus *Hilarimorpha* Schin., Verh. Zool. Bot. Gesellsch. 1881, pp. 327-329), has presented cogent reasons why the first location by Schiner is the correct one,—arguments with which, from the study of the present closely allied species, I fully agree. Roeder has recently published some remarks upon this subject, which I regret not to find among the copies of his papers that he has kindly sent me.

Professor Mik here takes the view, I may add, that a more decisive ground

for an opinion regarding the position can be expected only when the earlier stages are known, which unfortunately is not the case at present. Perhaps in such a case as the present, where there may be doubt, some important characters or mode of development in the immature stages may be sufficient to decide its position, but I am far from the belief, as I have elsewhere expressed myself, that characters drawn from the immature stages are of greater or even equal value with those shown by the adult insect. Professor Mik, with Professor Brauer, is inclined, as shown by his remarks in a recent number of the *Wiener Ent. Zeit.*, to subordinate adult characters in classification. But, notwithstanding the deservedly high repute of both these eminent entomologists, I cannot but differ with them, in a measure at least. Resemblances, in my opinion, are everywhere of more importance than differences; I do not think it desirable to separate species or genera that show important resemblances in the adult stage, no matter how important may be the differences of larvae or pupae. The differences among the earlier forms of the *ceci-*

*domyidae*, for instance, are much more important than the differences presented by the imagines; nevertheless, one will not split the *cecidomyidae* into corresponding families for that reason. Following is the description of the new *Hilarimorpha*, whose specific name it gives me pleasure to choose in honor of Professor Mik.

*Hilarimorpha mikii*, n. sp.

♂ Length 4 mm. Eyes broadly contiguous. Face opaque gray, with grooves from the oral margin. Antennae brownish yellow; the first two joints short, the third oval, a little longer than broad, the anterior borders straight or gently concave to the insertion of the slender two-jointed style, which is nearly as long as the body of the joint. Thorax in ground-color black, thickly covered on the mesonotum with opaque yellowish pollen; on the pleurae with lighter, less dense pollen. Abdomen with each segment anteriorly brownish black; posteriorly broadly banded with opaque yellow, of a color somewhat lighter than that of the mesonotum. Legs yellow, the terminal joints of the tarsi infuscated. Wings blackish, a little lighter behind.

Four specimens, Carlinville, Illinois (Charles Robertson.)

The neuration is quite as figured by Mik. in the paper above quoted, for the European *H. singularis* Egg.; the wing and cells are somewhat narrower. The third antennal joint is shorter, and the style longer than in *H. tristis*. The tarsi show no trace of an empodium under a compound microscope.

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For the reception of this genus a slight change will be necessary in the table of families recently published by me, as follows:

29.—Anal cell narrowly open or closed near the border; discal cell present.

*Bombylidae*.

Anal cell closed near the border; discal wanting. *Hilarimorpha* Schin.

Anal cell closed remote from the border.

*Empidae*.

Baron Osten Sacken published,\* not long ago, an elaborate article on the systematic position of the genus *Apiocera*, in which he combated the views of Schiner as regards the location of it under the *midaidae*, and sought to show that its proper position was among the *asilinae*. Other authors have not generally been in accord with him. Wiedemann, the first who described any species pertaining to the genus, looked upon the form as that of an Asilid. Westwood, the author of the genus, hesitated between the *midaidae* and *nemistrinidae*. Macquart established a new family for the genus, locating it next the *therevidae*. Philippi described a new species as an *Asilid*; and Gerstaecker, while refusing it admission to the *midaidae*, knew not where to place it. Schiner, on the other hand, insisted upon its union with the *midaidae*; Coquillett with the *therevidae*; Brauer and Mik as forming a distinct family allied to the *therevidae*. Finally, I too would

\*Berl. Ent. Zeitschr. xxvii, 287-294.

give to the group a family rank, locating it between the *asilidae* and *midaidae*.

The simultaneous possession of four species, three from Australia and *A. haruspev* O. S., will, I hope, give some weight to the remarks I would here offer concerning its true systematic position. As Osten Sacken very justly remarked in a letter to me, the group is an old one geologically, and within certain limits will show wide structural variation. In one of the species, both male and female, now before me, there is no indication whatever of any anterior branch to the third longitudinal vein. The absence of this vein under some circumstances would indicate very great structural differences, but, as Cope has more than once said, generic, or even family characters in transitional forms or isolated groups may cease to have even a specific value. Here a well-marked family character among the *asilidae*, *therevidae* and the like, I am satisfied has nothing more than a specific value, if it has even that. The *apioceridae* is an old, isolated, geological form; it cannot be allied to the *therevidae* or *asilidae* without doing violence to genetic relationships. On the other hand, the *midaidae*, certainly the *nemistridae*, and perhaps also, the *acroceridae*, are all families undergoing a similar decadence; all are apparently old geologically; all show remarkable neuronal variations within narrow limits, and all, except perhaps the *acroceridae*, seem to have more than an accidental

coincidence in their geographical distribution. Numerous forms of *nemistridae* and *midaidae* occur both in Australia and South America, as I can state from the examination of specimens. I do not wish it to be inferred from the above that *apiocera* should be looked upon as only an aberrant type of *midaidae*, but rather that the *apioceridae* from their isolated position should be recognized as distinct in the same way that these other families are. In one thing I agree with Osten Sacken; the shortness of the first longitudinal vein in *therevidae* points to a more remote geological divergence. The argument of fleshy labella has little weight, for in one of the species before me the proboscis is elongate, slender, and the labella small.

My views, then, in brief are: the *apioceridae* form an isolated group approaching extinction, it is probably most nearly related geologically to the *nemistridae* and *midaidae*, next to the *asilidae*, and less intimately to the *therevidae*. In consideration of these views it seems to me best to recognize the group as a distinct one under the name of *apioceridae*.

One other thing that has impressed me in the examination of a considerable collection of the South American flies, and a small one from Australia, and that is the points of resemblance that exists between the dipterological faunae of the two continents. This resemblance, too, in some respects, is more than superficial. With only my small collection for comparison I have

found no less than three genera of *asilidae* identical, and unknown elsewhere.

I regret never to have seen a specimen of *Rhaphiomidas* O. S., one of those peculiar transitional forms about which opinions will differ. Baron Osten Sacken has recently rejected it from the *midaidae*, and, judging from the description of the antennae, with good reason. These organs seem to be quite like those of the Dasygogonid *Ospriocerus*. In some features the form seems intermediate between

*Apiocera* and the *asilidae*, but the wing structure is so different from that of the latter family that I do not think it should be united with it. I would rather place it among the *apioceri-dae*. These and the many other oscilant genera in the Orthorrhaphous diptera serve only to emphasize the fact that nature abhors classification, and the only good that can come from their discussion is the elucidation of the relative values of different structural characters.

## DESCRIPTION OF ASPHONDYLIA HELIANTHI-GLOBULUS.

BY JOHN MARTEN, CHAMPAIGN, ILL.

This fly is recorded in Osten Sacken's Catalogue of N. A. Diptera, p. 5, as *A. helianthi-globulus*, Walsh (*in litt.*). Osten Sacken gives the following comparison. Trans. Am. Ent. Soc. Vol. III, p. 52.—“*A. rudbeckiae conspicua* at first sight is not unlike *A. helianthi-globulus*, Walsh *in litt.*, of which I owe a specimen to my lamented friend. Walsh's species, however, is easily distinguished by the paler color of its hind tibiae and tarsi. Its general color is also paler brown, with a yellowish-brown pubescence; its coxae are pale; the vein ending in the apex of the wing is less arched than in *A. rudbeckiae*.”

“*A. helianthi-globulus*, Walsh, forms a rounded swelling on the stem of *Helianthus*. As it has never been described these notes may serve to identify it.”

Imago, ♂ ♀, blackish brown, covered with grayish hairs (dry and alcoholic specimens become more brown); feet black with grayish hairs, femora brownish; hind tibiae, short first joint of the tarsi and the long second joint whitish tipped with black hairs. Wings clothed with dark grayish hairs, dusky; venation like that of *A. monacha*, O. Sack., it consists of three veins the last of which is forked, the anterior branch being partially concealed in a fold which extends to the root of the wing; the second vein is nearly straight and ends almost in the middle of the apex. The antennae are fourteen jointed (2 + 12), filiform and pubescent; the joints of the flagellum are cylindrical, of nearly equal gradually diminishing length up to the ninth; the tenth is smaller than the ninth; the eleventh and twelfth to-